BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

30 April 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Powerhouse Quarterly Excess Emissions Report, First Quarter - 2013
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this first quarterly Excess Emissions Report for the powerhouse for the first calendar quarter of 2013 (January 1 through March 31).

At the 30 November 2012 meeting between VDEQ, BAE Systems OSI, and the Army at the Roanoke Office, VDEQ offered the option of documenting any future powerhouse excess opacity events on a quarterly basis through submittal of an EER, rather than the current process of a 4-hour notification followed by a 14-day written follow-up. On 19 December 2012, BAE Systems OSI submitted a written response to notify VDEQ of our intention to document future powerhouse excess opacity events via quarterly Excess Emissions Reports, effective this first calendar quarter of 2013.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment – Powerhouse Visible Emissions Summary

cc: RFAAP ACO Staff/ DiIoia
File

FedEx: #7995 2612 7990

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ORDNANCE SYSTEMS INC.
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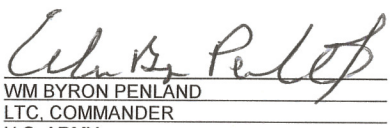
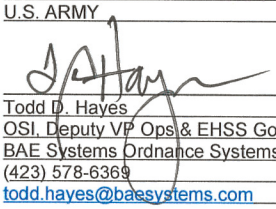
Certification of 30 April 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Excess Emissions Report (First Quarter of 2013) for the Powerhouse, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:		DATE:	22 APR 2013
NAME:	WM BYRON PENLAND	REGISTRATION NUMBER:	20656
TITLE:	LTC, COMMANDER	ADDRESS:	PO Box 1
COMPANY:	U.S. ARMY		Radford, VA 24143
SIGNATURE:		DATE:	19 April '13
NAME:	Todd D. Hayes	REGISTRATION NUMBER:	20656
TITLE:	OSI, Deputy VP Ops & EHSS Governance	ADDRESS:	PO Box 1
COMPANY:	BAE Systems Ordnance Systems Inc.		Radford, VA 24143
PHONE:	(423) 578-6369		
EMAIL:	todd.hayes@baesystems.com		

Attachment

Powerhouse Visible Emissions Summary

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
01/01/2013	06:12	12 min		X		X	X	27.5	Soot blowing.	Followed standard operating procedures.
01/01/2013	14:06	24 min		X		X	X	31.8	Soot blowing.	Followed standard operating procedures.
01/01/2013	22:06	12 min		X		X	X	25.0	Soot blowing.	Followed standard operating procedures.
01/02/2013	14:12	18 min		X	X	X	X	58.2	Soot blowing.	Followed standard operating procedures.
01/02/2013	16:24	12 min				X	X	20.2	Increased steam demand.	Used oil guns to support steam header pressure on Boiler #4 and #5.
01/02/2013	21:24	54 min		X		X		22.3	Increased steam demand.	Used oil guns to support steam header pressure on Boiler #4 and #5.
01/02/2013	23:48	12 min		X	X	X	X	32.8	Soot blowing.	Followed standard operating procedures.
01/06/2013	06:00	12 min		X	X	X	X	36.3	Soot blowing.	Followed standard operating procedures.
01/06/2013	14:12	12 min		X	X	X	X	27.6	Soot blowing.	Followed standard operating procedures.
01/06/2013	22:06	24 min		X	X	X	X	32.1	Soot blowing.	Followed standard operating procedures.
01/07/2013	05:06	18 min					X	35.8	Elevated opacity during shutdown of Boiler #5 due to a malfunctioning ID fan.	Followed standard operating procedures. Boiler #5 was shutdown to conduct the repair of the ID fan.
01/07/2013	06:00	30 min					X	36.2	Elevated opacity during shutdown of Boiler #5 due to a malfunctioning ID fan.	Followed standard operating procedures. Boiler #5 was shutdown to conduct the repair of the ID fan.
01/07/2013	12:36	36 min		X	X	X		38.7	Soot blowing.	Followed standard operating procedures.
01/07/2013	22:06	24 min		X	X	X		42.4	Soot blowing.	Followed standard operating procedures.
01/08/2013	06:06	18 min		X	X	X		30.8	Soot blowing.	Followed standard operating procedures.
01/08/2013	13:00	24 min				X		46.1	Soot blowing.	Followed standard operating procedures.
01/09/2013	13:00	18 min		X	X	X		43.5	Soot blowing.	Followed standard operating procedures.
01/09/2013	22:18	12 min		X	X	X		24.6	Soot blowing.	Followed standard operating procedures.
01/10/2013	06:12	12 min		X	X	X		34.8	Soot blowing.	Followed standard operating procedures.
01/12/2013	21:00	12 min		X	X	X		22.4	Soot blowing.	Followed standard operating procedures.
01/15/2013	06:00	12 min		X	X	X		27.8	Soot blowing.	Followed standard operating procedures.
01/15/2013	14:00	12 min		X	X	X		28.6	Soot blowing.	Followed standard operating procedures.
01/15/2013	19:06	24 min				X		34.1	Fire on Boiler #4 went out due to loss of coal feed as a result of a slipped belt.	Followed standard operating procedures. Restarted Boiler #4.
01/15/2013	20:24	24 min		X	X	X		31.1	Soot blowing.	Followed standard operating procedures.
01/16/2013	06:00	24 min		X	X	X		44.3	Soot blowing.	Followed standard operating procedures.
01/16/2013	14:12	12 min		X	X	X		25.3	Soot blowing.	Followed standard operating procedures.
01/17/2013	23:06	12 min			X			37.8	Equipment failure on 3B mill.	Followed standard operating procedures.
01/18/2013	04:30	48 min			X			46.9	Equipment failure on 3B mill.	Followed standard operating procedures.
01/19/2013	14:18	18 min		X	X	X		51.4	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
01/20/2013	05:48	6 min		X				**64.5**	Foreign material passing through the 2A pulverizer/mill caused inconsistent grinding of coal.	Followed standard operating procedures. The foreign material was cleared, and found to be a rock, and the 2A mill was placed back into service.
01/20/2013	14:00	12 min		X	X	X		35.3	Due to a wet coal supply, had to supplement with oil.	Followed standard operating procedures. Used one oil gun on each boiler to support steam header pressure due to the wet coal.
01/20/2013	22:12	12 min		X	X	X		29.5	Soot blowing.	Followed standard operating procedures.
01/21/2013	06:12	30 min		X	X	X		28.4	Soot blowing.	Followed standard operating procedures.
01/21/2013	11:36	12 min		X	X			25.6	Shutdown of 2B and 3B mills.	Followed standard operating procedures.
01/22/2013	06:06	18 min		X	X	X		29.4	Soot blowing.	Followed standard operating procedures.
01/22/2013	08:30	36 min					X	**62.7**	Firing of Boiler #5 for restart in response to observed period of high steam demand.	Followed standard operating procedures.
01/23/2013	05:00	12 min		X	X	X	X	24.5	Cleaned boilers and soot blowing.	Followed standard operating procedures.
01/23/2013	06:12	24 min		X	X	X	X	31.7	Soot blowing.	Followed standard operating procedures.
01/23/2013	14:24	12 min		X	X	X	X	22.1	Soot blowing.	Followed standard operating procedures.
01/23/2013	22:12	12 min		X	X	X	X	20.7	Soot blowing.	Followed standard operating procedures.
01/24/2013	06:06	12 min		X	X	X	X	27.4	Soot blowing.	Followed standard operating procedures.
01/24/2013	13:18	18 min		X	X	X	X	29.4	Soot blowing.	Followed standard operating procedures.
01/25/2013	06:00	12 min		X	X	X	X	22.6	Soot blowing.	Followed standard operating procedures.
01/25/2013	14:06	18 min		X	X	X	X	32.0	Soot blowing.	Followed standard operating procedures.
01/27/2013	13:48	18 min		X	X	X	X	23.4	Soot blowing.	Followed standard operating procedures.
01/29/2013	14:06	12 min		X	X	X	X	31.6	Soot blowing.	Followed standard operating procedures.
01/30/2013	14:00	12 min		X	X	X	X	21.9	Soot blowing.	Followed standard operating procedures.
01/31/2013	05:42	12 min		X	X	X	X	23.1	Cleaned boilers and soot blowing.	Followed standard operating procedures.
01/31/2013	20:36	18 min		X	X	X	X	38.2	Soot blowing.	Followed standard operating procedures.
02/02/2013	02:12	18 min		X	X	X	X	29.2	Soot blowing.	Followed standard operating procedures.
02/05/2013	13:00	12 min		X	X	X	X	23.2	Soot blowing.	Followed standard operating procedures.
02/06/2013	13:24	18 min		X	X	X	X	32.0	Soot blowing.	Followed standard operating procedures.
02/10/2013	16:00	18 min		X	X	X	X	45.1	Malfunction of the COMS.	Operator logbook noted that the opacity readings did not appear to be averaging correctly, based on the individual boiler readings. Foreman was notified by the shift operator, and an instrument technician was called out. Instrument technician replaced the air blower and cleaned the reflector on the COMS.
02/10/2013	19:00	12 hr 42 min		X	X	X	X	47.0		
02/11/2013	10:48	30 min		X	X	X	X	27.5	Shut-down of 2B mill and start-up of 2A mill in response to abnormal noise.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
02/11/2013	13:30	30 min				X		41.1	Shut-down of Boiler #4 in response to abnormal ID fan noise.	Followed standard operating procedures. Foreman requested shut-down of boiler so that maintenance personnel could work to repair fan.
02/11/2013	15:18	30 min		X			X	35.1	Start-up of 2B and 5B mills.	Followed standard operating procedures. Additional mills had to be brought online due to the shutdown of Boiler #4 for repair work.
02/11/2013	18:12	24 min				X		37.7	Restart of Boiler #4 following repair of ID fan.	Followed standard operating procedures.
02/11/2013	19:18	18 min		X			X	22.1	Shut-down of 2B and 5B mills, following repair of ID fan and return of Boiler #4 to service.	Followed standard operating procedures.
02/12/2013	00:12	18 min		X	X	X	X	38.9	Soot blowing.	Followed standard operating procedures.
02/12/2013	14:12	12 min		X	X	X	X	28.1	Soot blowing.	Followed standard operating procedures.
02/13/2013	01:36	18 min		X	X	X	X	34.7	Soot blowing.	Followed standard operating procedures.
02/13/2013	14:12	12 min		X	X	X	X	31.4	Soot blowing.	Followed standard operating procedures.
02/14/2013	14:30	18 min		X	X	X	X	26.1	Soot blowing.	Followed standard operating procedures.
02/17/2013	06:18	18 min		X	X	X	X	28.3	Soot blowing.	Followed standard operating procedures.
02/19/2013	06:12	18 min		X	X	X	X	33.3	Soot blowing.	Followed standard operating procedures.
02/21/2013	06:06	18 min		X	X	X	X	56.6	Soot blowing.	Followed standard operating procedures.
02/21/2013	13:42	18 min		X	X	X	X	52.0	Soot blowing.	Followed standard operating procedures.
02/21/2013	22:00	24 min		X	X	X	X	35.6	Soot blowing.	Followed standard operating procedures.
02/22/2013	06:24	12 min		X	X	X	X	34.3	Soot blowing.	Followed standard operating procedures.
02/22/2013	14:00	24 min		X	X	X	X	47.2	Soot blowing.	Followed standard operating procedures.
02/22/2013	22:12	18 min		X	X	X	X	31.1	Soot blowing.	Followed standard operating procedures.
02/23/2013	06:12	18 min		X	X	X	X	28.1	Soot blowing.	Followed standard operating procedures.
02/23/2013	13:12	18 min		X	X	X	X	30.3	Soot blowing.	Followed standard operating procedures.
02/23/2013	22:12	12 min		X	X	X	X	22.5	Soot blowing.	Followed standard operating procedures.
02/24/2013	11:24	18 min					X	43.1	Shut-down of Boiler #5 to realign mud drum heater.	Followed standard operating procedures.
02/24/2013	13:54	24 min		X	X	X		31.6	Soot blowing.	Followed standard operating procedures.
02/25/2013	06:12	12 min		X	X	X		21.6	Soot blowing.	Followed standard operating procedures.
02/25/2013	14:06	18 min		X	X	X		33.5	Soot blowing.	Followed standard operating procedures.
02/25/2013	22:24	12 min		X	X	X		26.0	Soot blowing.	Followed standard operating procedures.
02/26/2013	06:12	18 min		X	X	X		27.1	Soot blowing.	Followed standard operating procedures.
02/26/2013	14:18	12 min		X	X	X		28.6	Soot blowing.	Followed standard operating procedures.
02/27/2013	06:06	12 min		X	X	X		20.9	Soot blowing.	Followed standard operating procedures.
02/27/2013	20:18	18 min		X	X	X		42.1	Soot blowing.	Followed standard operating procedures.
02/28/2013	06:18	18 min		X	X	X		33.6	Soot blowing.	Followed standard operating procedures.
02/28/2013	13:18	12 min		X	X	X		29.5	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
02/28/2013	20:36	24 min		X	X	X		38.4	Soot blowing.	Followed standard operating procedures.
03/01/2013	06:06	12 min		X	X	X		39.2	Soot blowing.	Followed standard operating procedures.
03/01/2013	14:06	18 min		X	X	X		23.1	Soot blowing.	Followed standard operating procedures.
03/01/2013	20:30	12 min		X	X	X		29.0	Soot blowing.	Followed standard operating procedures.
03/02/2013	06:12	18 min		X	X	X		37.1	Soot blowing.	Followed standard operating procedures.
03/02/2013	14:06	18 min		X	X	X		25.1	Soot blowing.	Followed standard operating procedures.
03/03/2013	06:06	30 min		X	X	X		26.2	Soot blowing.	Followed standard operating procedures.
03/03/2013	22:00	12 min		X	X	X		28.2	Soot blowing.	Followed standard operating procedures.
03/04/2013	06:06	12 min		X	X	X		22.1	Soot blowing.	Followed standard operating procedures.
03/04/2013	14:00	18 min		X	X	X		35.1	Soot blowing.	Followed standard operating procedures.
03/04/2013	22:06	12 min		X	X	X		22.8	Soot blowing.	Followed standard operating procedures.
03/05/2013	06:06	18 min		X	X	X		26.2	Soot blowing.	Followed standard operating procedures.
03/05/2013	14:12	18 min		X	X	X		33.5	Soot blowing.	Followed standard operating procedures.
03/06/2013	05:42	18 min		X	X	X		35.3	Soot blowing.	Followed standard operating procedures.
03/06/2013	12:06	12 min					X	29.8	During restart of Boiler #5, fire went out once and had to be relit.	Followed standard operating procedures.
03/06/2013	13:06	18 min		X	X	X		41.8	Soot blowing.	Followed standard operating procedures.
03/09/2013	20:30	12 min		X	X	X		32.1	Soot blowing.	Followed standard operating procedures.
03/10/2013	05:00	12 min			X	X	X	32.2	Cleaned boilers.	Followed standard operating procedures.
03/10/2013	19:24	12 min			X	X	X	23.5	Indeterminate cause.	
03/11/2013	05:06	18 min			X	X	X	27.4	Soot blowing.	Followed standard operating procedures.
03/12/2013	00:42	18 min			X	X	X	34.7	Indeterminate cause.	
03/12/2013	13:18	12 min			X	X	X	26.8	Soot blowing.	Followed standard operating procedures.
03/12/2013	19:36	18 min			X	X	X	25.9	Soot blowing.	Followed standard operating procedures.
03/13/2013	05:06	18 min			X	X	X	29.0	Soot blowing.	Followed standard operating procedures.
03/14/2013	08:00	12 min			X	X	X	31.2	Soot blowing.	Followed standard operating procedures.
03/14/2013	14:06	18 min			X	X	X	37.7	Soot blowing.	Followed standard operating procedures.
03/15/2013	08:00	24 min			X	X	X	29.6	Soot blowing.	Followed standard operating procedures.
03/15/2013	14:06	24 min			X	X	X	33.6	Soot blowing.	Followed standard operating procedures.
03/15/2013	22:06	12 min			X	X	X	22.1	Soot blowing.	Followed standard operating procedures.
03/16/2013	22:18	12 min			X	X	X	23.3	Soot blowing.	Followed standard operating procedures.
03/17/2013	06:24	12 min			X	X	X	25.2	Soot blowing.	Followed standard operating procedures.
03/17/2013	14:06	18 min			X	X	X	34.3	Soot blowing.	Followed standard operating procedures.
03/20/2013	04:12	12 min				X		24.8	4A mill tripped offline unexpectedly.	Followed standard operating procedures. Had to use oil gun to maintain steam header pressure while bringing 4A mill back online.
03/21/2013	15:18	18 min			X	X	X	34.0	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
03/21/2013	16:00	12 min			X			30.2	Restart of 3A mill after having been taken offline for cleaning. Tripped a safety upon restart.	Followed standard operating procedures. Foreman notified of safety trip out.
03/22/2013	06:12	18 min			X	X	X	28.4	Soot blowing.	Followed standard operating procedures.
03/22/2013	07:12	12 min			X			55.4	Shut-down of 3A mill due to continued instability. Oil gun used to support header pressure while mill was being taken out of service.	Followed standard operating procedures. Maintenance was notified and the 3A mill was taken out of service for repair. Increased opacity was due to use of oil gun during mill shutdown.
03/22/2013	14:24	24 min			X	X	X	38.5	Soot blowing.	Followed standard operating procedures.
03/22/2013	22:12	18 min			X	X	X	28.9	Soot blowing.	Followed standard operating procedures.
03/23/2013	06:06	18 min			X	X	X	36.0	Soot blowing.	Followed standard operating procedures.
03/23/2013	14:00	18 min			X	X	X	45.0	Soot blowing.	Followed standard operating procedures.
03/23/2013	22:12	24 min			X	X	X	36.8	Soot blowing.	Followed standard operating procedures.
03/24/2013	13:30	18 min			X	X	X	36.2	Soot blowing.	Followed standard operating procedures.
03/24/2013	22:12	24 min			X	X	X	21.6	Soot blowing.	Followed standard operating procedures.
03/26/2013	14:06	18 min			X	X	X	27.5	Soot blowing.	Followed standard operating procedures.
03/27/2013	20:24	24 min			X	X	X	47.3	Soot blowing.	Followed standard operating procedures.
03/28/2013	06:06	24 min			X	X	X	43.2	Soot blowing.	Followed standard operating procedures.
03/28/2013	20:30	24 min			X	X	X	46.5	Soot blowing.	Followed standard operating procedures.
03/28/2013	21:00	18 min					X	22.3	Mill 5B unexpectedly went offline, causing the turbine to trip off.	Followed standard operating procedures.
03/28/2013	22:06	18 min					X	23.2	Restart of 5B mill.	Followed standard operating procedures.
03/28/2013	23:36	24 min					X	21.1	Turbine tripped offline.	Followed standard operating procedures.
03/29/2013	06:12	12 min			X	X	X	26.5	Soot blowing.	Followed standard operating procedures.
03/29/2013	14:24	12 min			X	X	X	25.8	Soot blowing.	Followed standard operating procedures.
03/30/2013	22:12	12 min			X	X	X	21.9	Soot blowing.	Followed standard operating procedures.
03/31/2013	06:06	18 min			X	X	X	21.0	Soot blowing.	Followed standard operating procedures.
03/31/2013	14:24	12 min			X	X	X	23.3	Soot blowing.	Followed standard operating procedures.
03/31/2013	18:30	24 min				X		50.3	Emergency shut-down of Boiler #5.	Shift operator reported abnormal conditions on Boiler #5 to foreman. Upon investigation, foreman requested immediate emergency shut-down of Boiler #5 due to dangerously excessive vibration. The utilities foreman was also notified.
03/31/2013	20:12	12 min			X	X		49.7	Indeterminate cause.	Soot-blowing was not conducted due to high load placed on the only two boilers in operation upon emergency shutdown of Boiler #5 for repair.

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30 July 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Powerhouse Quarterly Excess Emissions Report, Second Quarter - 2013
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly Excess Emissions Report (EER) for the powerhouse for the second calendar quarter of 2013 (April 1 through June 30).

At the 30 November 2012 meeting between VDEQ, BAE Systems OSI, and the Army at the Roanoke Office, VDEQ offered the option of documenting any future powerhouse excess opacity events on a quarterly basis through submittal of an EER, rather than the process of a 4-hour notification followed by a 14-day written follow-up as described in the Title V permit for the facility. On 19 December 2012, BAE Systems OSI submitted a written response to notify VDEQ of our intention to document powerhouse excess opacity events via quarterly EERs, effective the first calendar quarter of 2013.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment – Powerhouse Visible Emissions Summary

cc: RFAAP ACO Staff/ DiIoia
File

FedEx: #7961 3088 3617

Bogucki
13-0900-093

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Certification of 30 July 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Excess Emissions Report (Second Quarter of 2013) for the Powerhouse, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: Luis A. Ortiz
TITLE: Lieutenant Colonel, Commanding
COMPANY: U.S. Army

DATE: 29 July 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE: for
NAME: Todd D. Hayes
TITLE: OSI, VP Ops & EHSS Governance
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 16 July 13
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Bogucki
13-0900-093

Attachment

Powerhouse Visible Emissions Summary

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
04/01/2013	08:48	18 min					X	28.5	Elevated opacity due to testing of internal draft fan and restart of Boiler #5.	On the previous day, there was an emergency shutdown of Boiler #5 for repair. The work was completed and the boiler brought back online.
04/02/2013	06:12	12 min			X	X	X	22.0	Soot blowing.	Followed standard operating procedures.
04/02/2013	13:30	18 min			X	X	X	25.5	Soot blowing.	Followed standard operating procedures.
04/02/2013	22:12	18 min			X	X	X	25.0	Soot blowing.	Followed standard operating procedures.
04/03/2013	06:06	12 min			X	X	X	26.3	Soot blowing.	Followed standard operating procedures.
04/03/2013	14:12	18 min			X	X	X	36.7	Soot blowing.	Followed standard operating procedures.
04/03/2013	22:06	18 min			X	X	X	40.5	Soot blowing.	Followed standard operating procedures.
04/04/2013	06:06	18 min			X	X	X	37.1	Soot blowing.	Followed standard operating procedures.
04/05/2013	06:12	18 min			X	X	X	38.9	Soot blowing.	Followed standard operating procedures.
04/05/2013	11:48	18 min			X	X	X	39.3	Cleaned boilers.	Followed standard operating procedures.
04/05/2013	13:00	12 min			X	X	X	34.7	Indeterminate cause.	
04/05/2013	21:36	18 min			X	X	X	29.3	Soot blowing.	Followed standard operating procedures.
04/06/2013	06:24	12 min			X	X	X	24.3	Soot blowing.	Followed standard operating procedures.
04/06/2013	14:30	12 min			X	X	X	27.7	Soot blowing.	Followed standard operating procedures.
04/06/2013	20:36	12 min			X	X	X	28.8	Soot blowing.	Followed standard operating procedures.
04/07/2013	05:54	18 min			X	X	X	36.3	Soot blowing.	Followed standard operating procedures.
04/07/2013	14:12	12 min			X	X	X	39.4	Soot blowing.	Followed standard operating procedures.
04/07/2013	20:24	18 min			X	X	X	35.1	Soot blowing.	Followed standard operating procedures.
04/08/2013	06:06	18 min			X	X	X	34.5	Soot blowing.	Followed standard operating procedures.
04/08/2013	14:12	24 min			X	X	X	35.2	Soot blowing.	Followed standard operating procedures.
04/08/2013	20:42	18 min			X	X	X	30.8	Soot blowing.	Followed standard operating procedures.
04/09/2013	06:12	18 min			X	X	X	31.0	Soot blowing.	Followed standard operating procedures.
04/09/2013	14:18	18 min			X	X	X	27.3	Soot blowing.	Followed standard operating procedures.
04/10/2013	11:30	18 min			X	X	X	30.1	Soot blowing.	Followed standard operating procedures.
04/11/2013	06:06	12 min			X	X	X	31.9	Soot blowing.	Followed standard operating procedures.
04/11/2013	14:06	12 min			X	X	X	34.1	Soot blowing.	Followed standard operating procedures.
04/11/2013	22:12	18 min			X	X	X	29.9	Soot blowing.	Followed standard operating procedures.
04/12/2013	14:30	12 min			X	X	X	29.3	Soot blowing.	Followed standard operating procedures.
04/12/2013	22:06	18 min			X	X	X	28.0	Soot blowing.	Followed standard operating procedures.
04/28/2013	06:12	12 min			X	X	X	22.9	Soot blowing.	Followed standard operating procedures.
04/29/2013	13:06	18 min		X	X		X	34.9	Cleaned boilers.	Followed standard operating procedures.
04/29/2013	15:00	36 min			X		X	45.4	Emergency shutdown of Boiler #3 due to safety valve which popped and would not reseat.	Foreman and engineers were notified of safety valve issue. Boiler #5 was brought online as a substitute for Boiler #3.
05/06/2013	06:12	12 min		X	X		X	29.3	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
05/07/2013	06:24	18 min		X	X		X	36.8	Soot blowing.	Followed standard operating procedures.
05/07/2013	20:18	18 min		X	X		X	24.1	Soot blowing.	Followed standard operating procedures.
05/15/2013	13:36	12 min					X	29.4	Shutdown of Boiler #5 for troubleshooting.	Maintenance determined that seals were leaking on the main feed pump for Boiler #5.
05/15/2013	14:06	12 min		X	X			28.5	Soot blowing.	Followed standard operating procedures.
05/20/2013	13:06	12 min			X		X	56.3	The fire went out on Boiler #3 due to a blockage on the 3A feeder.	The oil guns on Boiler #5 had to be used to support steam header pressure while clearing the blockage from the 3A feeder, returning the 3A mill to operation, and relighting the fire on Boiler #3.
05/24/2013	19:00	18 min					X	47.2	Start-up of Boiler #5.	Followed standard operating procedures.
05/26/2013	14:24	12 min		X	X		X	23.2	Soot blowing.	Followed standard operating procedures.
05/26/2013	22:06	12 min		X	X		X	22.6	Soot blowing.	Followed standard operating procedures.
05/28/2013	06:12	18 min		X	X			24.0	Soot blowing.	Followed standard operating procedures.
06/06/2013	05:54	18 min		X	X			25.9	Soot blowing.	Followed standard operating procedures.
06/07/2013	03:54	36 min		X	X		X	**72.5**	Increased steam demand.	Used oil guns to support steam header pressure on Boilers #2 and #3, while Boiler #5 was being brought online. Since only two boilers were operating at the time of the event, they were more susceptible and not able to as easily absorb a sudden load swing.
06/11/2013	21:12	12 min		X	X		X	27.4	Start-up of Boiler #5.	Followed standard operating procedures.
06/12/2013	11:18	12 min		X	X	X		27.3	Start-up of 3B mill. 2A mill had been taken down for maintenance/adjustment.	Followed standard operating procedures.
06/13/2013	13:24	18 min		X	X	X		34.1	Soot blowing.	Followed standard operating procedures.
06/13/2013	22:00	12 min		X	X	X		21.6	Soot blowing.	Followed standard operating procedures.
06/14/2013	19:24	12 min		X	X	X		21.9	Indeterminate cause.	
06/14/2013	22:00	12 min		X	X	X		27.6	Soot blowing.	Followed standard operating procedures.
06/15/2013	01:12	12 min		X	X	X		20.4	Cleaned boilers.	Followed standard operating procedures.
06/15/2013	09:06	24 min		X	X	X		24.7	Indeterminate cause.	Boilers were cleaned at 10:00 hrs in response to elevated opacity readings. Also brought Mill 2A online and took 4B offline. These actions dropped the opacity to 10%.
06/15/2013	10:18	36 min		X	X	X		22.2	Cleaned boilers.	Followed standard operating procedures.
06/18/2013	21:12	12 min				X		35.3	Furnace draft fan on Boiler #4 tripped offline and would not restart.	Shutdown Boiler #4 and restarted 3B Mill/Feeder.
06/19/2013	15:48	24 min				X		38.2	Furnace draft fan on Boiler #4 tripped offline and would not restart.	The boiler operator called the foreman, and an electrician was sent out for service.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
06/21/2013	14:42	54 min				X		**64.4**	Furnace draft fan on Boiler #4 tripped offline again when trying to restart the boiler after extended maintenance work.	Boiler #2 was brought back online while maintenance work continued on Boiler #4.
06/26/2013	14:18	12 min		X	X			**82.9**	Lightning strike during a severe thunderstorm knocked the furnace draft fans on Boilers #2 and #3 offline, and fire was lost on both boilers. Communication with the computer system was also temporarily lost.	At 14:23 hrs, the furnace fires were relit and all mills were brought back online.
06/27/2013	06:06	12 min		X	X			22.6	Soot blowing.	Followed standard operating procedures.
06/27/2013	10:06	18 min		X				22.2	Shutdown of Boiler #2.	Followed standard operating procedures.
06/27/2013	11:06	12 min		X		X		20.2	Indeterminate cause.	
06/27/2013	12:48	12 min					X	44.7	Start-up of Boiler #5.	Followed standard operating procedures.
06/27/2013	14:12	12 min				X		23.3	Soot blowing.	Followed standard operating procedures.
06/27/2013	17:00	30 min			X		X	28.4	Shutdown of Boiler #3 due to precipitator issues.	Brought the 5A Mill online.
06/30/2013	10:18	18 min				X	X	39.0	Cleaned boilers.	Followed standard operating procedures.

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
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Radford, VA 24141
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Telephone (540) 639-7323

30 October 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Powerhouse Quarterly Excess Emissions Report, Third Quarter - 2013
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly Excess Emissions Report (EER) for the powerhouse for the third calendar quarter of 2013 (July 1 through September 30).

At the 30 November 2012 meeting between VDEQ, BAE Systems OSI, and the Army at the Roanoke Office, VDEQ offered the option of documenting any future powerhouse excess opacity events on a quarterly basis through submittal of an EER, rather than the process of a 4-hour notification followed by a 14-day written follow-up as described in the Title V permit for the facility. On 19 December 2012, BAE Systems OSI submitted a written response to notify VDEQ of our intention to document powerhouse excess opacity events via quarterly EERs, effective the first calendar quarter of 2013.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len Diloia, Jr.

Enclosure: Additional Certification Document
Attachment – Powerhouse Visible Emissions Summary

cc: RFAAP ACO Staff/ Diloia
File

FedEx: #7967 9751 2303

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BAE SYSTEMS

ORDNANCE SYSTEMS INC.
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Certification of 30 October 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Excess Emissions Report (Third Quarter of 2013) for the Powerhouse, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: Luis A. Ortiz
TITLE: Lieutenant Colonel, Commanding
COMPANY: U.S. Army

DATE: 21 Oct 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: Todd D. Hayes
TITLE: OSI, VP Ops & EHSS Governance
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 17 Oct 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

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13-0900-140

Attachment

Powerhouse Visible Emissions Summary

Powerhouse Visible Emissions Summary

Radford Army Ammunition Plant (Reg. 20656)

1 July through 30 September 2013 (3Q 2013)

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
07/01/2013	07:00	12 min				X		38.4	Shut down fans on Boiler #4. The powerhouse was being brought to a shutdown condition in preparation for annual maintenance activities during the July 4th Holiday shutdown period.	Followed standard operating procedures.
07/02/2013	15:24	42 min		X	X	X	X	48.7	Indeterminate cause; powerhouse was shut down and not operating at the time that this registered on the COMS.	This event occurred while the powerhouse was shutdown for an extended period during the July 4th holiday week to allow for annual inspections and preventative maintenance activities of the boilers. This opacity incident was not associated with active operations, but as a result of a round of scheduled semiannual maintenance activities. Since the powerhouse was not operating, the Boiler Operator Logbook does not indicate the specific activity that was occurring at this time. All maintenance records are maintained in the Maximo PM system.
07/07/2013	06:00	12 min				X		31.7	Firing Boiler #4 for restart from cold shutdown.	Followed standard operating procedures.
07/07/2013	09:06	30 min				X		25.3	Start-up of 4A mill during restart of Boiler #4 from cold shutdown..	Followed standard operating procedures.
07/07/2013	13:24	48 min				X		41.8	Start-up of 4b mill during restart of Boiler #4 from cold shutdown.	Followed standard operating procedures.
07/07/2013	15:12	30 min			X			42.3	Start-up of 3A mill during restart of Boiler #3 from cold shutdown..	Followed standard operating procedures.
07/10/2013	16:42	18 min					X	**87.4**	Start-up of 3B mill during restart of Boiler #3 from cold shutdown..	Followed standard operating procedures.
07/11/2013	13:48	18 min			X	X		27.3	Soot blowing.	Followed standard operating procedures.
07/11/2013	19:12	12 min		X				20.1	Failed attempt to bring Boiler #2 online from a cold startup.	Followed standard operating procedures.
07/11/2013	22:12	12 min			X	X		25.4	Soot blowing.	Followed standard operating procedures.
07/12/2013	06:06	18 min			X	X		25.7	Soot blowing.	Followed standard operating procedures.
07/12/2013	10:00	1 hr 12 min			X	X		22.3	Soot blowing.	Followed standard operating procedures.
07/12/2013	14:18	12 min			X	X		26.1	Soot blowing.	Followed standard operating procedures.
07/13/2013	01:36	18 min			X	X		20.4	Cleaned boilers.	Followed standard operating procedures.

Powerhouse Visible Emissions Summary

1 July through 30 September 2013 (3Q 2013)

Date	Start Time	Duration	Boiler Unit #1	#2	#3	#4	#5	Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
07/13/2013	02:06	12 min			X	X		21.0	Suspected anomalous readings from 02:06-06:06 hrs on 13 July 2013, preceding the COMS failure. The average opacity values on the main stack COMS appeared to be increasing over this time period with no concomitant increase observed for the individual boilers. Personnel promptly notified the foreman that there was a potential issue. During the time that the COMS was providing invalid readings and not operating properly, it indicated results ranging between 57.5 to 63.8 percent opacity.	The initial readings over 20 percent opacity are not believed to be valid and accurate data, but a precursor to the COMS failure that occurred at 06:06 hrs on 13 July 2013. During the period that the COMS was malfunctioning, operators performed additional Method 9 readings to ensure that the main stack opacity was maintained below 20 percent. Instrument technicians worked on the COMS, and ultimately had to reset the Opacity Monitor to factory default settings. The COMs was restored to normal operation at 14:35 hrs on 16 July 2013.
07/13/2013	03:12	24 min			X	X		20.6		
07/13/2013	05:06	24 min			X	X		21.7		
07/13/2013	06:06	17 hr 42 min			X	X		**62.3** *(invalid)*		
07/14/2013	00:00	24 hr 0 min			X	X		**60.2** *(invalid)*		
07/15/2013	00:00	24 hr 0 min			X			**63.8** *(invalid)*		
07/16/2013	00:00	14 hr 36 min			X	X		**60.3** *(invalid)*		
07/18/2013	14:06	12 min			X	X		21.2	Soot blowing.	Followed standard operating procedures.
07/19/2013	06:06	12 min			X	X		23.7	Soot blowing.	Followed standard operating procedures.
07/19/2013	10:12	12 min		X				23.6	Start-up of Boiler #2.	Followed standard operating procedures.
07/19/2013	11:18	30 min		X	X			45.5	The opacity values for this period are suspected to be anomalous. Powerhouse personnel observed that the COMS monitor not working properly, and notified the foreman.	Powerhouse personnel observed that the main stack COMS readings were erratically fluctuating between 18 and 45 percent opacity, although the individual boilers that were operating at the time did not exhibit opacities in this range. The foreman was notified and maintenance was informed. Maintenance was working on Boiler #4 at the time, and it is possible that some of these activities could have contributed in part to the elevated opacity.
07/19/2013	13:36	36 min		X	X			25.8		
07/20/2013	05:42	12 min				X		21.3	Shutdown of Boiler #4 for repairs.	Followed standard operating procedures.
07/22/2013	11:00	18 min			X			37.5	Shutdown of Boiler #3 for repairs.	Followed standard operating procedures.
07/29/2013	06:06	12 min		X		X		20.8	Soot blowing.	Followed standard operating procedures.
07/29/2013	20:12	12 min		X		X		21.7	Soot blowing.	Followed standard operating procedures.
07/31/2013	06:12	12 min		X		X		26.3	Soot blowing.	Followed standard operating procedures.
08/03/2013	04:48	12 min		X				29.2	Malfunction/trip-out of 2B feeder.	Oil guns were used on Boiler #2 to support header pressure while the 2B feeder was brought back online.
08/04/2013	18:18	36 min			X	X		**72.0**	Failure of the Boiler 4A exhauster coupling.	Due to the malfunction of Boiler 4, operators brought Boiler 3 online in preparation to take Boiler 4 offline for repair. A replacement coupling insert was installed the next day.

Powerhouse Visible Emissions Summary

1 July through 30 September 2013 (3Q 2013)

Date	Start Time	Duration	Boiler Unit #1	#2	#3	#4	#5	Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
08/04/2013	19:18	12 min			X			47.5	Start-up of Boiler #3.	Followed standard operating procedures.
08/04/2013	20:30	12 min				X		29.6	Shutdown of Boiler #4 for repairs.	Followed standard operating procedures. The 3B mill was brought online while Boiler #4 was shut-down for repairs.
08/04/2013	21:12	12 min				X		25.3		
08/05/2013	10:18	18 min				X		33.9	Failed start-up attempt on Boiler #4.	The 3B mill was taken offline, and the 4A mill was brought online with the restart of Boiler #4. However, 4A mill was observed to have excessive noise/vibration while operating, and was switched back off for further investigation.
08/08/2013	09:00	12 min			X			34.1	Testing of internal draft fan on Boiler #3 prior to firing this boiler for restart.	Followed standard operating procedures. Boiler was not operating at the time of this event, but was having its fan tested.
08/08/2013	10:12	12 min			X			20.2	Start-up of 3B mill.	Followed standard operating procedures.
08/13/2013	22:00	12 min		X		X		21.7	Soot blowing.	Followed standard operating procedures.
08/14/2013	20:30	12 min		X		X		22.2	Soot blowing.	Followed standard operating procedures.
08/17/2013	06:12	18 min		X		X		20.4	Soot blowing.	Followed standard operating procedures.
08/18/2013	04:48	12 min		X				47.9	Malfunction/trip-out of 2A feeder.	Followed standard operating procedures.
08/21/2013	14:06	12 min		X		X		26.7	Soot blowing.	Followed standard operating procedures.
08/25/2013	06:06	12 min			X	X		21.5	Soot blowing.	Followed standard operating procedures.
08/25/2013	08:00	54 min				X		23.5	Failure of Boiler 4A precipitator.	The foreman was notified immediately, maintenance was called, and Boiler #4 was brought to shutdown for repair.
08/25/2013	09:48	36 min				X		29.6		
08/25/2013	11:30	18 min		X	X			**62.1**	Loss of fire on Boiler #2 due to demand surge while it was in start-up mode, resulting in use of the oil guns on Boiler #3. Boiler #4 was offline for repair of the failed precipitator, and Boiler #2 was being brought online.	Only Boiler #3 was operating at the time of this incident, as Boiler #4 was being worked on by maintenance, and Boiler #2 was being brought online so that the plant could come off of load reduction limitations. A sudden surge in steam demand resulted in loss of fire on Boiler #2, and required use of the oil guns on Boiler #3 to maintain header pressure.
08/28/2013	14:12	12 min		X		X		41.6	Soot blowing.	Followed standard operating procedures.
08/29/2013	10:06	12 min				X		51.9	Indeterminate cause.	---
08/30/2013	13:18	12 min		X	X			22.8	Soot blowing.	Followed standard operating procedures.
08/30/2013	22:06	12 min		X	X			27.3	Soot blowing.	Followed standard operating procedures.
08/31/2013	05:54	18 min		X	X			24.2	Soot blowing.	Followed standard operating procedures.
08/31/2013	20:18	12 min		X	X			23.3	Soot blowing.	Followed standard operating procedures.
09/01/2013	06:24	12 min		X	X			25.5	Soot blowing.	Followed standard operating procedures.
09/01/2013	13:00	12 min		X	X			24.4	Soot blowing.	Followed standard operating procedures.

Powerhouse Visible Emissions Summary

Radford Army Ammunition Plant (Reg. 20656)

1 July through 30 September 2013 (3Q 2013)

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
09/04/2013	00:48	12 min			X			43.1	Use of oil guns when taking the 3A mill down for maintenance.	The 3A mill had to be taken offline for cleaning, and oil guns had to be used on Boilers #2 and #3 to support header pressure while the maintenance was being conducted. The 3A mill was brought back online at 01:10 hrs.
09/05/2013	15:30	12 min		X	X			25.5	Soot blowing.	Followed standard operating procedures.
09/06/2013	22:06	12 min		X	X			25.3	Soot blowing.	Followed standard operating procedures.
09/07/2013	06:06	12 min		X	X			41.7	Soot blowing.	Followed standard operating procedures.
09/10/2013	13:30	18 min		X				54.8	Failed attempt to bring Boiler #2 online.	Upon firing Boiler #2 for restart at approximately 13:30 hrs, the furnace draft fan would not start up normally. Since elevated opacity was observed, personnel aborted the attempt to restart Boiler #2 at 13:45 hrs, and notified the foreman to call maintenance.
09/12/2013	05:42	24 min			X	X	X	29.9	Soot blowing.	Followed standard operating procedures.
09/13/2013	04:06	24 min					X	40.9	Malfunction/trip-out of 5A mill, which required Boiler #5 to be taken offline.	Coal pipe for Boiler #5 was found to have developed a plug; this was cleared by personnel.
09/13/2013	05:12	12 min			X	X	X	36.6	Soot blowing.	Followed standard operating procedures.
09/13/2013	14:00	12 min			X	X		27.7	Soot blowing.	Followed standard operating procedures.
09/13/2013	20:24	12 min			X	X		27.6	Soot blowing.	Followed standard operating procedures.
09/14/2013	06:18	12 min			X	X		36.2	Soot blowing.	Followed standard operating procedures.
09/14/2013	14:12	12 min			X	X		29.4	Soot blowing.	Followed standard operating procedures.
09/16/2013	06:12	12 min			X	X		28.1	Soot blowing.	Followed standard operating procedures.
09/16/2013	12:48	18 min			X	X		31.3	Soot blowing.	Followed standard operating procedures.
09/16/2013	22:06	12 min			X	X		31.7	Soot blowing.	Followed standard operating procedures.
09/17/2013	12:48	18 min			X	X		33.7	Soot blowing.	Followed standard operating procedures.
09/17/2013	22:06	12 min			X	X		24.8	Soot blowing.	Followed standard operating procedures.
09/18/2013	06:06	12 min			X	X		34.9	Soot blowing.	Followed standard operating procedures.
09/18/2013	13:18	12 min			X	X		40.4	Soot blowing.	Followed standard operating procedures.
09/18/2013	20:30	12 min			X	X		31.9	Soot blowing.	Followed standard operating procedures.
09/19/2013	06:12	18 min			X	X		23.8	Soot blowing.	Followed standard operating procedures.
09/19/2013	22:18	12 min					X	34.6	Start-up of Boiler #5.	Followed standard operating procedures.
09/20/2013	11:06	18 min			X		X	42.5	Shutdown of Boiler #5, restart of Boiler #3.	Followed standard operating procedures.
09/20/2013	20:30	12 min				X	X	35.8	Soot blowing.	Followed standard operating procedures.
09/21/2013	06:12	12 min				X	X	24.2	Soot blowing.	Followed standard operating procedures.
09/21/2013	14:06	12 min				X	X	26.0	Soot blowing.	Followed standard operating procedures.
09/21/2013	20:18	12 min				X	X	36.6	Soot blowing.	Followed standard operating procedures.

Powerhouse Visible Emissions Summary

Radford Army Ammunition Plant (Reg. 20656)

(Page 5 of 5)

1 July through 30 September 2013 (3Q 2013)

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg.	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5	(% Opacity)		
09/22/2013	05:42	12 min				X	X	37.5	Soot blowing.	Followed standard operating procedures.
09/22/2013	14:06	12 min				X	X	28.3	Soot blowing.	Followed standard operating procedures.
09/22/2013	20:18	18 min				X	X	47.4	Soot blowing.	Followed standard operating procedures.
09/22/2013	21:06	12 min			X			20.1	Start-up of Boiler #3.	Followed standard operating procedures.
09/23/2013	06:06	18 min				X	X	50.6	Soot blowing.	Followed standard operating procedures.
09/23/2013	14:24	18 min				X	X	29.4	Soot blowing.	Followed standard operating procedures.
09/23/2013	20:30	18 min				X	X	45.9	Soot blowing.	Followed standard operating procedures.
09/24/2013	06:18	12 min				X	X	43.4	Soot blowing.	Followed standard operating procedures.
09/24/2013	13:54	18 min				X	X	30.2	Soot blowing.	Followed standard operating procedures.
09/24/2013	20:12	12 min				X	X	37.5	Soot blowing.	Followed standard operating procedures.
09/25/2013	06:06	18 min				X	X	49.4	Soot blowing.	Followed standard operating procedures.
09/25/2013	14:30	18 min				X	X	33.1	Soot blowing.	Followed standard operating procedures.
09/25/2013	22:00	12 min				X	X	33.4	Soot blowing.	Followed standard operating procedures.
09/26/2013	06:06	12 min				X	X	36.7	Soot blowing.	Followed standard operating procedures.
09/26/2013	13:12	12 min				X	X	38.6	Soot blowing.	Followed standard operating procedures.
09/26/2013	22:00	12 min				X	X	46.9	Soot blowing.	Followed standard operating procedures.
09/27/2013	04:42	30 min			X	X		**64.5**	Malfunction/failure of the Boiler 4B coupling, start-up of Boiler #3.	Boiler #4 was taken offline for troubleshooting/repair, and Boiler #3 was fired for restart to compensate for loss of Boiler #4.

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

30 January 2014

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Powerhouse Quarterly Excess Emissions Report, Fourth Quarter - 2013
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly Excess Emissions Report (EER) for the powerhouse for the fourth calendar quarter of 2013 (October 1 through December 31).

At the 30 November 2012 meeting between VDEQ, BAE Systems OSI, and the Army at the Roanoke Office, VDEQ offered the option of documenting any future powerhouse excess opacity events on a quarterly basis through submittal of an EER, rather than the process of a 4-hour notification followed by a 14-day written follow-up as described in the Title V permit for the facility. On 19 December 2012, BAE Systems OSI submitted a written response to notify VDEQ of our intention to document powerhouse excess opacity events via quarterly EERs, effective the first calendar quarter of 2013.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment – Powerhouse Visible Emissions Summary

cc: RFAAP ACO Staff/ DiIoia
File

FedEx: #7974 8092 4933

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14-0900-001

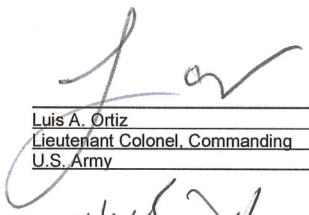
BAE SYSTEMS

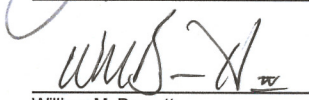
ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 30 January 2014 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Excess Emissions Report (Fourth Quarter of 2013) for the Powerhouse, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: 
NAME: Luis A. Ortiz
TITLE: Lieutenant Colonel, Commanding
COMPANY: U.S. Army
DATE: 23 Jan 14
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE: 
NAME: William M. Barnett
TITLE: General Manager, RFAAP
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (540) 639-8400
EMAIL: william.m.barnett@baesystems.com
DATE: 22 JAN 14
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

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14-0900-001

Attachment

Powerhouse Visible Emissions Summary

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
10/03/2013	14:12	12 min				X	X	45.7	Soot blowing.	Followed standard operating procedures.
10/04/2013	13:36	12 min				X	X	40.0	Soot blowing.	Followed standard operating procedures.
10/04/2013	22:18	12 min				X	X	36.0	Soot blowing.	Followed standard operating procedures.
10/05/2013	08:30	12 min				X	X	42.5	Soot blowing.	Followed standard operating procedures.
10/05/2013	22:12	12 min				X	X	22.6	Soot blowing.	Followed standard operating procedures.
10/06/2013	13:24	18 min				X	X	39.2	Soot blowing.	Followed standard operating procedures.
10/06/2013	22:12	12 min				X	X	31.2	Soot blowing.	Followed standard operating procedures.
10/07/2013	06:00	12 min				X	X	25.5	Soot blowing.	Followed standard operating procedures.
10/07/2013	07:24	12 min				X	X	54.2	Indeterminate cause.	---
10/07/2013	22:00	18 min				X	X	26.4	Soot blowing.	Followed standard operating procedures.
10/08/2013	06:12	24 min				X	X	28.1	Soot blowing.	Followed standard operating procedures.
10/08/2013	17:42	12 min				X	X	22.5	Soot blowing.	Followed standard operating procedures.
10/08/2013	22:12	12 min				X	X	54.9	Soot blowing.	Followed standard operating procedures.
10/09/2013	20:24	18 min				X	X	50.2	Soot blowing.	Followed standard operating procedures.
10/10/2013	06:06	12 min				X	X	42.0	Soot blowing.	Followed standard operating procedures.
10/10/2013	13:42	12 min				X	X	31.7	Soot blowing.	Followed standard operating procedures.
10/10/2013	20:42	12 min				X	X	30.2	Soot blowing.	Followed standard operating procedures.
10/11/2013	05:48	18 min				X	X	41.0	Soot blowing.	Followed standard operating procedures.
10/11/2013	14:24	12 min				X	X	40.3	Soot blowing.	Followed standard operating procedures.
10/11/2013	20:36	12 min				X	X	39.2	Soot blowing.	Followed standard operating procedures.
10/12/2013	05:54	12 min				X	X	43.7	Soot blowing.	Followed standard operating procedures.
10/12/2013	13:42	12 min				X	X	26.0	Soot blowing.	Followed standard operating procedures.
10/12/2013	20:18	12 min				X	X	23.9	Soot blowing.	Followed standard operating procedures.
10/13/2013	12:36	18 min				X	X	27.4	Soot blowing.	Followed standard operating procedures.
10/14/2013	06:18	12 min				X	X	24.2	Soot blowing.	Followed standard operating procedures.
10/14/2013	13:30	12 min				X	X	31.8	Soot blowing.	Followed standard operating procedures.
10/15/2013	06:00	12 min				X	X	29.6	Soot blowing.	Followed standard operating procedures.
10/15/2013	13:42	18 min				X	X	38.8	Soot blowing.	Followed standard operating procedures.
10/15/2013	22:06	12 min				X	X	34.9	Soot blowing.	Followed standard operating procedures.
10/16/2013	05:36	12 min					X	47.7	Transiently increased load observed from 05:00-05:10 hrs and 05:20-05:40 hrs.	Used oil guns to support steam header pressure on Boiler #5.
10/16/2013	12:54	18 min				X	X	39.0	Soot blowing.	Followed standard operating procedures.
10/16/2013	20:48	12 min				X	X	34.6	Soot blowing.	Followed standard operating procedures.
10/17/2013	06:06	12 min				X	X	33.1	Soot blowing.	Followed standard operating procedures.
10/18/2013	06:12	18 min		X		X	X	27.6	Soot blowing.	Followed standard operating procedures.
10/18/2013	14:24	18 min		X		X	X	25.4	Soot blowing.	Followed standard operating procedures.
10/21/2013	20:30	12 min		X		X	X	34.3	Soot blowing.	Followed standard operating procedures.
10/22/2013	20:30	12 min		X		X	X	20.7	Soot blowing.	Followed standard operating procedures.
10/23/2013	06:00	12 min		X		X	X	30.3	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
10/23/2013	14:06	12 min		X		X	X	27.8	Soot blowing.	Followed standard operating procedures.
10/24/2013	06:06	12 min		X		X	X	20.5	Soot blowing.	Followed standard operating procedures.
10/25/2013	14:06	12 min		X		X	X	24.6	Soot blowing.	Followed standard operating procedures.
10/26/2013	20:24	24 min		X		X	X	36.3	Soot blowing.	Followed standard operating procedures.
10/27/2013	06:06	18 min		X		X	X	29.9	Soot blowing.	Followed standard operating procedures.
10/27/2013	20:30	18 min		X		X	X	26.1	Soot blowing.	Followed standard operating procedures.
10/28/2013	06:12	18 min		X		X	X	31.2	Soot blowing.	Followed standard operating procedures.
10/31/2013	13:42	18 min		X		X	X	32.9	Soot blowing.	Followed standard operating procedures.
10/31/2013	22:06	12 min		X		X	X	37.1	Soot blowing.	Followed standard operating procedures.
11/01/2013	14:18	18 min		X		X	X	32.3	Soot blowing.	Followed standard operating procedures.
11/01/2013	22:06	12 min		X		X	X	37.2	Soot blowing.	Followed standard operating procedures.
11/02/2013	14:42	24 min		X		X	X	37.5	Soot blowing.	Followed standard operating procedures.
11/02/2013	22:18	18 min		X		X	X	28.0	Soot blowing.	Followed standard operating procedures.
11/03/2013	07:12	12 min		X		X	X	21.6	Indeterminate cause.	---
11/03/2013	13:36	18 min		X		X	X	36.5	Soot blowing.	Followed standard operating procedures.
11/03/2013	23:06	18 min		X		X	X	28.0	Soot blowing.	Followed standard operating procedures.
11/04/2013	06:30	24 min		X		X	X	27.0	Soot blowing.	Followed standard operating procedures.
11/04/2013	13:36	18 min		X		X	X	33.1	Soot blowing.	Followed standard operating procedures.
11/04/2013	22:12	24 min		X		X	X	36.8	Soot blowing.	Followed standard operating procedures.
11/05/2013	06:00	24 min		X		X	X	37.5	Soot blowing.	Followed standard operating procedures.
11/05/2013	22:06	18 min		X		X	X	41.7	Soot blowing.	Followed standard operating procedures.
11/06/2013	06:06	30 min		X		X	X	32.6	Soot blowing.	Followed standard operating procedures.
11/06/2013	14:18	18 min		X		X	X	42.8	Indeterminate cause.	---
11/06/2013	20:30	30 min		X		X	X	59.4	Soot blowing.	Followed standard operating procedures.
11/07/2013	06:06	24 min		X		X	X	57.4	Soot blowing.	Followed standard operating procedures.
11/07/2013	13:12	18 min		X		X	X	50.5	Soot blowing.	Followed standard operating procedures.
11/07/2013	20:30	18 min		X		X	X	57.0	Soot blowing.	Followed standard operating procedures.
11/08/2013	06:06	24 min		X		X	X	57.0	Soot blowing.	Followed standard operating procedures.
11/08/2013	13:24	30 min		X		X	X	37.7	Soot blowing.	Followed standard operating procedures.
11/08/2013	20:24	18 min		X		X	X	51.7	Soot blowing.	Followed standard operating procedures.
11/09/2013	05:36	24 min		X		X	X	50.7	Soot blowing.	Followed standard operating procedures.
11/09/2013	13:06	30 min		X		X	X	31.1	Soot blowing.	Followed standard operating procedures.
11/09/2013	22:12	18 min		X		X	X	47.7	Soot blowing.	Followed standard operating procedures.
11/10/2013	06:12	18 min		X		X	X	**62.6**	Soot blowing.	Followed standard operating procedures.
11/10/2013	13:12	30 min		X		X	X	37.6	Soot blowing.	Followed standard operating procedures.
11/10/2013	22:12	24 min		X		X	X	43.2	Soot blowing.	Followed standard operating procedures.
11/11/2013	06:18	18 min		X		X	X	45.1	Soot blowing.	Followed standard operating procedures.
11/11/2013	14:18	24 min		X		X	X	42.8	Soot blowing.	Followed standard operating procedures.
11/11/2013	20:36	12 min		X		X	X	32.7	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
11/12/2013	06:24	12 min		X		X	X	41.1	Soot blowing.	Followed standard operating procedures.
11/12/2013	08:48	12 min					X	22.1	Soot blowing.	Followed standard operating procedures.
11/12/2013	13:00	30 min		X	X	X	X	53.1	Soot blowing, and relighting of Boiler #3 for warming up.	Followed standard operating procedures.
11/12/2013	20:42	24 min		X		X	X	30.5	Soot blowing.	Followed standard operating procedures.
11/13/2013	06:12	24 min		X		X	X	37.7	Soot blowing.	Followed standard operating procedures.
11/13/2013	14:24	24 min		X		X	X	59.7	Soot blowing.	Followed standard operating procedures.
11/14/2013	06:18	18 min		X		X	X	38.5	Soot blowing.	Followed standard operating procedures.
11/14/2013	14:24	18 min		X		X	X	31.3	Soot blowing.	Followed standard operating procedures.
11/14/2013	20:24	30 min		X		X	X	39.0	Soot blowing.	Followed standard operating procedures.
11/15/2013	06:00	30 min		X		X	X	49.1	Soot blowing.	Followed standard operating procedures.
11/15/2013	13:00	24 min		X		X	X	38.0	Soot blowing.	Followed standard operating procedures.
11/15/2013	20:18	30 min		X		X	X	40.5	Soot blowing.	Followed standard operating procedures.
11/16/2013	06:06	24 min		X		X	X	43.5	Soot blowing.	Followed standard operating procedures.
11/16/2013	15:00	24 min		X		X	X	34.0	Soot blowing.	Followed standard operating procedures.
11/16/2013	20:18	24 min		X		X	X	43.0	Soot blowing.	Followed standard operating procedures.
11/17/2013	06:12	18 min		X		X	X	50.0	Soot blowing.	Followed standard operating procedures.
11/17/2013	14:00	30 min		X		X	X	38.7	Soot blowing.	Followed standard operating procedures.
11/17/2013	20:24	24 min		X		X	X	47.1	Soot blowing.	Followed standard operating procedures.
11/18/2013	05:36	30 min		X		X	X	51.6	Soot blowing.	Followed standard operating procedures.
11/18/2013	12:48	30 min		X		X	X	51.4	Soot blowing.	Followed standard operating procedures.
11/18/2013	20:18	24 min		X		X	X	48.4	Soot blowing.	Followed standard operating procedures.
11/19/2013	05:54	24 min		X		X	X	53.1	Soot blowing.	Followed standard operating procedures.
11/19/2013	11:06	2 hr 24 min			X		X	46.4	Sequence of startups/shutdowns to switch boilers. Between 11:06 and 13:24 hrs, 20 of the 24 6-min block average periods exceeded 20 percent opacity. An attempt was made to fire Boiler #3 to bring it online and Boiler #5 was shutdown. Difficulties were encountered with firing Boiler #3, and Boiler #5 had to be brought back online.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
11/19/2013	15:12	36 min		X		X	X	42.0	Loss of plant air, resulting in a drop in steam pressure and a loss of fire on Boiler #2. The emergency air compressor also failed to start.	As Powerhouse controls are pneumatic, when plant air pressure was lost, the operators were unable to control the boilers. The pressure drop also slowed the draft fans, resulting in a loss of fire on Boiler #2 and increasing opacity. Additionally, the backup air compressor did not start automatically, and went into alarm mode when Powerhouse personnel attempted a manual start. Review of compressor faults showed a "motor reverse rotation" fault then an "emergency stop" fault. The motor reverse rotation fault is not able to be explained, as the motor was hooked up correctly and no work had been performed on the wiring; the emergency stop fault was when the foreman tried to reset the compressor after the initial fault. In order to prevent a reoccurrence of this incident in the event of plant air loss, the Powerhouse has now implemented weekly testing of the compressor via a 4-way valve that will isolate and depressurize the pressure transducer and thereby trigger the compressor to start.
11/19/2013	20:30	12 min		X		X	X	21.5	Soot blowing.	Followed standard operating procedures.
11/20/2013	06:00	18 min		X		X	X	35.1	Soot blowing.	Followed standard operating procedures.
11/20/2013	13:00	18 min		X		X	X	40.7	Soot blowing.	Followed standard operating procedures.
11/20/2013	22:12	12 min		X	X	X		46.3	Soot blowing.	Followed standard operating procedures.
11/21/2013	06:00	18 min		X	X	X		38.0	Soot blowing.	Followed standard operating procedures.
11/21/2013	13:12	18 min		X	X	X		37.8	Soot blowing.	Followed standard operating procedures.
11/22/2013	14:00	12 min					X	38.8	Unexpected loss of fire on Boiler #5.	Followed standard operating procedures.
11/23/2013	06:06	12 min		X	X	X		30.3	Soot blowing.	Followed standard operating procedures.
11/23/2013	14:06	18 min		X	X	X		45.0	Soot blowing.	Followed standard operating procedures.
11/23/2013	20:06	24 min		X	X	X		34.6	Soot blowing.	Followed standard operating procedures.
11/24/2013	06:00	24 min		X	X	X		51.6	Soot blowing.	Followed standard operating procedures.
11/24/2013	14:00	12 min		X	X	X		57.3	Soot blowing.	Followed standard operating procedures.
11/24/2013	20:00	24 min		X	X	X		**61.5**	Soot blowing.	Followed standard operating procedures.
11/25/2013	06:00	18 min		X	X	X		50.8	Soot blowing.	Followed standard operating procedures.
11/25/2013	14:00	18 min		X	X	X		34.3	Soot blowing.	Followed standard operating procedures.
11/25/2013	20:30	18 min		X	X	X		23.4	Soot blowing.	Followed standard operating procedures.
11/26/2013	06:18	18 min		X	X	X		30.1	Soot blowing.	Followed standard operating procedures.
11/26/2013	11:00	24 min		X	X	X	X	31.7	Cleaning boilers.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
11/26/2013	20:24	18 min		X	X	X	X	35.8	Soot blowing.	Followed standard operating procedures.
11/27/2013	22:00	18 min		X	X	X	X	25.4	Soot blowing.	Followed standard operating procedures.
11/28/2013	06:06	12 min		X	X	X	X	35.5	Soot blowing.	Followed standard operating procedures.
11/28/2013	14:12	18 min		X	X	X	X	35.5	Soot blowing.	Followed standard operating procedures.
11/28/2013	22:12	12 min		X	X	X	X	31.2	Soot blowing.	Followed standard operating procedures.
11/29/2013	06:06	18 min		X	X	X	X	33.2	Soot blowing.	Followed standard operating procedures.
11/29/2013	14:18	24 min		X	X	X	X	41.6	Soot blowing.	Followed standard operating procedures.
11/29/2013	22:06	18 min		X	X	X	X	31.6	Soot blowing.	Followed standard operating procedures.
11/30/2013	06:06	12 min		X	X	X	X	26.9	Soot blowing.	Followed standard operating procedures.
11/30/2013	15:00	18 min		X	X	X	X	37.1	Soot blowing.	Followed standard operating procedures.
12/01/2013	06:00	18 min		X	X	X	X	24.4	Soot blowing.	Followed standard operating procedures.
12/01/2013	13:36	24 min		X	X	X	X	40.8	Soot blowing.	Followed standard operating procedures.
12/01/2013	22:00	18 min		X	X	X	X	48.4	Soot blowing.	Followed standard operating procedures.
12/02/2013	06:06	12 min		X	X	X	X	31.2	Soot blowing.	Followed standard operating procedures.
12/02/2013	14:06	24 min		X	X	X	X	50.7	Soot blowing.	Followed standard operating procedures.
12/02/2013	21:06	12 min		X	X	X	X	43.8	Indeterminate cause.	---
12/02/2013	22:00	24 min		X	X	X	X	35.6	Soot blowing.	Followed standard operating procedures.
12/03/2013	05:54	24 min		X	X	X	X	36.0	Soot blowing.	Followed standard operating procedures.
12/03/2013	14:06	36 min		X	X	X	X	46.6	Soot blowing at 14:00 hrs, followed by a malfunction of the 2A mill.	Followed standard operating procedures. The 2A mill jammed at approximately 14:20 hrs, requiring the 2B mill to be brought online. The 2A mill was able to be brought back online at 14:35 hrs.
12/03/2013	18:48	12 min		X	X	X	X	30.6	Indeterminate cause.	---
12/03/2013	20:12	36 min		X	X	X	X	41.4	Soot blowing.	Followed standard operating procedures.
12/04/2013	05:54	24 min		X	X	X	X	26.6	Soot blowing.	Followed standard operating procedures.
12/04/2013	14:06	24 min		X	X	X	X	42.8	Soot blowing.	Followed standard operating procedures.
12/04/2013	20:18	30 min		X	X	X	X	48.9	Soot blowing.	Followed standard operating procedures.
12/05/2013	03:24	12 min		X	X	X	X	28.7	Indeterminate cause.	---
12/05/2013	06:00	30 min		X	X	X	X	44.3	Soot blowing.	Followed standard operating procedures.
12/05/2013	09:42	12 min		X	X	X	X	21.0	Cleaning boilers.	Followed standard operating procedures.
12/05/2013	11:24	12 min		X	X	X	X	21.0	Indeterminate cause.	Powerhouse personnel observed atypical spikes in opacity and reported them to the foreman. It is believed that these opacity events of indeterminate cause were precursors to the precipitator and vibrator malfunctions which occurred on 6 December 2013.
12/05/2013	12:00	24 min		X	X	X	X	24.1	Indeterminate cause.	
12/05/2013	14:00	24 min		X	X	X	X	49.1	Indeterminate cause.	
12/05/2013	20:12	24 min		X	X	X	X	55.6	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
12/06/2013	04:36	13 hr 54 min		X	X	X	X	**73.7**	Identification of loss of communication with the ESP vibrator program. At approximately 06:00 hrs on 1 December 2013, the power supply on the ESP data acquisition and control computer failed. At the time that the failure had occurred, it was not considered a major issue as the stack opacity data was being captured by Active Factory and resident programs at the ESP voltage and rapper controls were in service. On Friday, 6 December 2013, elevated stack opacity became a persistent issue.	Upon detailed examination it was found the resident programs for the rapper controls was an outdated version from before the ESP vibrators were replaced in 2008. This resident program was not compatible with the current vibrators. The old hard drive from the failed computer was installed in another computer but control could not be established. The root cause was identified after close-of-business on a Friday (December 6), so the ESP controls manufacturer could not be contacted for support until Monday (December 9). Over the weekend, fuel oil was used to replace a portion of the coal to reduce dust loading on the ESP's and NC production was curtailed to reduce boiler load. On Monday, it was discovered the rapper control and data acquisition program, on the hard drive, was not configured for the single serial port on the replacement computer. Reprogramming on the rapper controls was done to allow communications through the single serial port. Once firing programs for all rappers and vibrators was completed, the new program was uploaded to the local control card cages. Testing confirmed the rappers and vibrator were now running properly on the local resident program(s).
12/06/2013	19:18	12 min		X	X	X	X	22.0	Indeterminate cause.	Powerhouse was in malfunction condition at the time of this opacity excursion.
12/06/2013	20:06	42 min		X	X	X	X	56.1	Soot blowing.	Followed standard operating procedures.
12/07/2013	06:06	24 min		X	X	X	X	53.1	Soot blowing.	Followed standard operating procedures.
12/07/2013	13:00	18 min		X	X	X	X	**61.6**	Soot blowing.	Followed standard operating procedures.
12/07/2013	14:24	12 min		X	X	X	X	41.6	Soot blowing.	Followed standard operating procedures.
12/07/2013	22:00	12 min		X	X	X	X	49.5	Soot blowing.	Followed standard operating procedures. Had to use oil to support header pressure during soot blowing during malfunction conditions.
12/07/2013	23:30	12 min		X	X	X	X	32.0	Soot blowing.	Followed standard operating procedures.
12/08/2013	12:54	18 min		X	X	X	X	52.0	Soot blowing.	Followed standard operating procedures.
12/08/2013	22:00	18 min		X	X	X	X	55.9	Soot blowing.	Followed standard operating procedures.
12/09/2013	06:06	18 min		X	X	X	X	41.0	Soot blowing.	Followed standard operating procedures.
12/09/2013	13:36	24 min		X	X	X	X	57.7	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
12/09/2013	14:12	18 min		X				22.7	Fired Boiler #2 for restart.	Followed standard operating procedures.
12/10/2013	13:30	18 min		X	X	X	X	30.9	Soot blowing.	Followed standard operating procedures.
12/10/2013	20:18	30 min		X	X	X	X	29.7	Soot blowing.	Followed standard operating procedures.
12/11/2013	13:30	24 min		X	X	X	X	47.5	Soot blowing.	Followed standard operating procedures.
12/11/2013	20:42	18 min		X	X	X	X	43.1	Soot blowing.	Followed standard operating procedures.
12/12/2013	06:12	24 min		X	X	X	X	45.2	Soot blowing.	Followed standard operating procedures.
12/12/2013	14:06	18 min		X	X	X	X	52.3	Soot blowing.	Followed standard operating procedures.
12/12/2013	20:30	24 min		X	X	X	X	39.3	Soot blowing.	Followed standard operating procedures.
12/13/2013	06:06	30 min		X	X	X	X	59.7	Soot blowing.	Followed standard operating procedures.
12/13/2013	14:06	24 min		X	X	X	X	30.1	Soot blowing.	Followed standard operating procedures.
12/13/2013	20:30	18 min		X	X	X	X	43.8	Soot blowing.	Followed standard operating procedures.
12/14/2013	06:18	30 min		X	X	X	X	55.2	Soot blowing.	Followed standard operating procedures.
12/14/2013	15:00	30 min		X	X	X	X	37.7	Soot blowing.	Followed standard operating procedures.
12/14/2013	20:24	24 min		X	X	X	X	38.7	Soot blowing.	Followed standard operating procedures.
12/15/2013	05:48	18 min		X	X	X	X	44.0	Soot blowing.	Followed standard operating procedures.
12/15/2013	14:00	30 min		X	X	X	X	37.7	Soot blowing.	Followed standard operating procedures.
12/15/2013	20:12	18 min		X	X	X	X	38.9	Soot blowing.	Followed standard operating procedures.
12/16/2013	05:54	24 min		X	X	X	X	46.1	Soot blowing.	Followed standard operating procedures.
12/16/2013	13:00	24 min		X	X	X	X	56.3	Soot blowing.	Followed standard operating procedures.
12/16/2013	20:18	24 min		X	X	X	X	42.4	Soot blowing.	Followed standard operating procedures.
12/17/2013	06:00	24 min		X	X	X	X	47.7	Soot blowing.	Followed standard operating procedures.
12/17/2013	13:12	24 min		X	X	X	X	54.5	Soot blowing.	Followed standard operating procedures.
12/17/2013	20:24	18 min		X	X	X	X	30.7	Soot blowing.	Followed standard operating procedures.
12/18/2013	05:54	18 min		X	X	X	X	50.3	Soot blowing.	Followed standard operating procedures.
12/18/2013	13:12	24 min		X	X	X	X	52.0	Soot blowing.	Followed standard operating procedures.
12/18/2013	22:00	18 min		X	X	X	X	39.9	Soot blowing.	Followed standard operating procedures.
12/19/2013	06:00	1 hr 0 min		X	X	X	X	**78.3**	Failure of water wall tube at Boiler #2.	Boiler #2 was taken out of service to conduct the repair.
12/19/2013	22:00	18 min			X	X	X	23.7	Soot blowing.	Followed standard operating procedures.
12/21/2013	14:06	18 min			X	X	X	29.3	Soot blowing.	Followed standard operating procedures.
12/21/2013	20:18	12 min			X	X	X	39.6	Soot blowing.	Followed standard operating procedures.
12/22/2013	12:00	12 min			X	X	X	23.6	Indeterminate cause.	---
12/22/2013	14:06	24 min			X	X	X	54.4	Soot blowing, and discovery of ash collection system malfunction.	The foreman was notified of the ash collection system malfunction, and repair personnel were called in to conduct the work which was completed on the morning of 12/23/2013.
12/22/2013	16:12	1 hr 12 min			X	X	X	26.9	Soot blowing.	Followed standard operating procedures.
12/22/2013	20:30	18 min			X	X	X	48.7	Soot blowing.	Followed standard operating procedures.
12/23/2013	06:06	18 min			X	X	X	56.7	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
12/23/2013	10:42	12 min			X	X	X	23.6	Soot blowing.	Followed standard operating procedures.
12/23/2013	11:00	18 min					X	25.0	Shutdown of Boiler #5.	Followed standard operating procedures.
12/23/2013	12:42	12 min			X	X		27.9	Indeterminate cause.	---
12/23/2013	15:06	12 min			X	X		33.9	Soot blowing.	Followed standard operating procedures.
12/23/2013	19:36	12 min			X	X		21.7	Indeterminate cause.	---
12/23/2013	20:18	18 min			X	X		35.0	Soot blowing.	Followed standard operating procedures.
12/24/2013	06:18	12 min			X	X		23.0	Soot blowing.	Followed standard operating procedures.
12/24/2013	15:00	18 min			X	X		28.5	Soot blowing.	Followed standard operating procedures.
12/24/2013	20:24	18 min			X	X		44.5	Soot blowing.	Followed standard operating procedures.
12/25/2013	05:12	30 min					X	**63.7**	Restart of Boiler #5 to bring online as standby.	Followed standard operating procedures.
12/25/2013	06:12	24 min			X	X		46.1	Soot blowing.	Followed standard operating procedures.
12/25/2013	10:36	12 min					X	21.4	Restart of Boiler #5 to bring online as standby after an internal draft fan repair.	Followed standard operating procedures.
12/25/2013	12:06	12 min			X	X	X	24.6	Indeterminate cause.	---
12/25/2013	22:00	18 min			X	X	X	33.7	Soot blowing.	Followed standard operating procedures.
12/26/2013	05:12	12 min			X	X	X	20.9	Cleaning boilers.	Followed standard operating procedures.
12/26/2013	05:54	12 min			X	X	X	42.0	Soot blowing.	Followed standard operating procedures.
12/26/2013	09:06	24 min			X	X	X	23.7	Cleaning boilers.	Followed standard operating procedures.
12/26/2013	12:24	2 hr 12 min			X	X	X	28.6	Loss of communication between the control system and the rappers/tappers and ESPs.	It was determined that due to a loss of communication, the ESPs were not running properly. Powerhouse personnel received instruction from supervision on how to re-program the precipitators and reestablish communication.
12/27/2013	14:00	12 min			X	X	X	25.6	Soot blowing.	Followed standard operating procedures.
12/28/2013	01:36	12 min			X	X	X	47.8	Unexpected loss of fire on Boiler #5.	Followed standard operating procedures.
12/28/2013	14:00	18 min			X	X		40.7	Soot blowing.	Followed standard operating procedures.
12/28/2013	16:00	18 min		X	X	X		21.1	Indeterminate cause.	---
12/28/2013	17:18	18 min		X	X	X		23.4	Indeterminate cause.	Foreman was notified of unexpected higher than normal opacity.
12/28/2013	18:00	30 min					X	21.7	Fired Boiler #5 for restart.	Followed standard operating procedures.
12/28/2013	19:18	30 min					X	22.6	Unexpected loss of fire on Boiler #5.	Followed standard operating procedures.
12/29/2013	06:00	12 min		X	X	X		25.7	Soot blowing.	Followed standard operating procedures.
12/29/2013	12:30	18 min		X	X	X		56.9	Soot blowing.	Followed standard operating procedures.
12/30/2013	22:06	12 min		X	X	X		35.2	Soot blowing.	Followed standard operating procedures.
12/31/2013	06:00	12 min		X	X	X		34.9	Soot blowing.	Followed standard operating procedures.
12/31/2013	22:00	12 min		X	X	X		40.6	Soot blowing.	Followed standard operating procedures.